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IMPACT OF ELECTRONIC LABORATORY DATA EXCHANGE ON THE QUALITY OF HEALTHCARE DELIVERY: THE HUMAN RESOURCES PERSPECTIVE

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Abstract

Information and communication technology has become one of the important topics at present, due to the developments in this field and its impact on other fields. Information andcommunication technology has spread widely in various organizations and institutions because of the facilitation it provides to achieve goals, through the advantages and developments it provides, especially in human resources, which is the most important aspect of organizations. Organizations need to evaluate the role of information technology and its impact on the performance of human resources and the services that provided. Hospitals aim to provide quality health care to patients by reducing errors and effort when dealing with patient data, where the exchange of patient records is one of the most important problems because decision-making depends mainly on the speed of access to patient records. This study aims to identify the effect of electronic data exchange between the laboratory and other units in Souk Al-Shuyoukh Hospital(Thi-Qar Governorate) on healthcare quality. On the other hand, study the impact of the relationship between human resources and information technology on health care .The descriptive and analytical approach was used as a study methodology. The results support the relationship between human resources that uses information technology and quality of healthcare delivery.

Keywords: Information Technology, Human Resources, Healthcare, Electronic Data Exchange.

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1. Introduction

Organizations are experiencing changes and transformations as a result of the acceleration of the technical and informational revolution and technological progress, especially in the field of information and communication technology(Singh et al., 2020). One of the most important responses to these developments is the emergence of electronic management concepts and applications(Yan et al., 2018). Electronic management is considered a revolution in the world of modern management as a result of its positive effects in facilitating administrative processes, reducing the time and cost of completing tasks, making information available at all times, and developing job performance,and raising the level of efficiency and productivity of the organization by employing technology and information systems in support the management process , and the benefits of electronic management are not limited to the administrative aspects, but extend to the economic, political and social aspects of the organization(Turulja & Bajgoric, 2018).

One of the most important sectors that seek to apply electronic management and information technology (IT) is health organizations. The health sector plays an important role at the individual and community levels. Most health centers lack qualified personnel to deal with data and provide detailed information about the health situation in the center according to experience and job skill(Zheng, 2017).

The services provided in the health side depend mainly on good management by identifying the appropriate means to provide services as well as selecting working cadres and working to develop their capabilities(Yusuf et al., 2014).

The study focuses on the effect of electronic data exchange between the laboratory and other units in Souk Al-Shuyoukh Hospital(Thi-Qar Governorate), and how could this affect the quality of health care provided. Where,an electronic system was used to transfer the results of the laboratory analysis to other units.In addition, the research focused on the effect of using the electronic system on the performance of health care providers.

The importance of this study is to reveal the extent to which the application of IT contributes to raising the performance and activation of the relationship between members of the institution and its role in eliminating the various obstacles that impede the process of information with the required accuracy and in the specified time.

The study aims to determine the impact of information and communication technology on the performance of human resourceswhen providing services to patients in Souk Al-Shuyoukh Hospital - Laboratories Department.As well as indicating how IT affects organizations and identifying the truth about the relationship of human resources performance with IT.

1. Related concepts and studies

In this part of the study, we explain IT and human resources and the relationship between them as two of the basic concepts used in this study. Table 1. presents the related studies.

Table 1: Related studies.

Study	Aimof study	Results
Sittig et al. (2020)	Identified nine challenges of healthcare organizations for IT developers, to focus efforts on patient safety.	Highlighting the importance of these challenges in order to provide health care organizations based on health information technology.
Wu and Trigo (2020)	Reviewed information systems integration of healthcare management and medical services.	Despite the obstacles that exist, integration between information systems and healthcare management deserves a call to develop this integration.
Feeley et al. (2020)	Discuss the development of healthcare information technology in recent years.	Propose a strategy for developing and implementing platforms for healthcare delivery.
Yan et al. (2018)	A discovery about the impact of the use of information technology on health care.	Obtaining useful information for stakeholders in the field of health information technology.
Liang et al. (2017)	A mobilehealthcare system was designed and implemented for collection and sharing personal health data.	The implemented algorithm canpreserve both integrity and privacyat the same time.

Imler et al. (2016)	Defined the necessary standards for health information technology.	The development and improvement of these standards will provide information on patients for the purpose of improving health care.
Yang et al. (2015)	Reviewed and discussed electronic health records and health cloud computing and the effectiveness of these services on health care delivery.	The use of new concepts in health information technology helps to enhance health care capabilities and enhance the aspect of protecting information privacy.
Laohakangvalvit and Achalakul (2014)	Propose a framework based on electronic health record (EHR).	The proposed framework was validated by healthcare experts.
Ker et al. (2014)	Evaluate the using of information technology in U.S. hospital.	The results indicated a reduction in the time required to process the query.
Turan and Palvia (2014)	A review of important issues in Turkish healthcare.	Provide a standard and framework for decision-makers in the field of healthcare information technology in Turkey.

1.1. Information technology

IT is the various types of discoveries, developments and inventions that dealt with and deal with data and information, in terms of collecting, analyzing, organizing, storing and retrieving them, in a timely, appropriate and available manner(M.R et al., 2011).

Furthermore, IT provides all the necessary steps to facilitate the process of network management as well as technical implementation, which thus leads to the standardization of the method of developing business and its activities.Expanding and continuous growth of the scope of IT application and continuous growth, This will reflect positively to improve the features of IT to facilitate the process of HRMin organizations (Msiska, 2017).

Figure 1 presents the main interface of the laboratory data exchange program in the Souk Al-Shuyoukh Hospital.

Fig. 1. The main interface of the laboratory data exchange program.

1.2. Human Resources

Human Resource Management (HRM)refers to the basic philosophy of the organization of maximizing the organizational performance of the human condition with the production and utilization of a set of management practices and associated management tasks. The goal of HRM is to achieve the best possible businesses"(Gunawan & Kurnia, 2019).

Currently, due to the increase in production processes and work sites for modern institutions, the need has emerged to adopt methods to facilitate work and communication, because the traditional model of HRM cannot be adapted to this development of organizations. On the other hand, modern management of human resources requires providing high-precision materials, expanding the scope of management and absorbing the full potential of workers, all of this provides additional pressure on HRM.(Tang et al., 2020).

Therefore, in order to further increase the quality of the administration of human capital, organizations should embrace the application. Digital technology in the HRM mode, in order to preferable gather personnel information and retrieve , successfully enhance the management performance of organizations and facilitate long-term stable market growth..

1.3. Information technology's influence on human resource management

IT helps in controlling and controlling HRM processes. The management of human resources requires a large range of items, included recruiting, interviewing, preparation and material evaluation, in the processing a large number of irrelevant activities that need to be spent too much time and effort(Erickson et al., 2020). Moreover, owing to the nature of employee information sharing issues, which have also caused human resource managers to feel helpless, the effects are less successful andthey does not lead to improving the performance of HRMof organization(Sittig et al., 2020). HRM considers the use of IT important in its management model.

Traditional HRM requires a lot of manual work in the area of accounting practices and other businesses, which allows HRM staff to lose a lot of time, spent a lot of energy to analyze, but still create some inevitable challenges, poor productivity, which creates a lot of discomfort to the HRM working belt(Wu & Trigo, 2020). The advancement of information systems and artificial intelligence and its wide availability and ease of use will lead to the end of manual work, Day by day, the term one click has become a popular term for simple and complex matters, increase work productivity and facilitate optimization of HRM models(Nomani & Hussain, 2020).

Previously, HRMstresses the limitations and supervision of workers, they think that employees would not consciously take the initiative to complete the mission, lacking the staff's own capacity to innovate, forcing employees to behave in compliance with the standards and specifications of the organization, while this standardization mechanism could, to a certain degree, facilitate the productivity of businesses(Ratwani et al., 2019; Soyemi et al., 2014){Soyemi, 2014 #4;Ratwani, 2019 #27}. It brings a static workflow, is difficult to innovate efficiently, and is not conducive to long-term company growth. And, with the use of IT, workers can completely mobilize their autonomy to accomplish the right workforce arrangement (Manogaran et al., 2017). IT has revolutionized the idea of HRM, enabled employees to innovate, and the flame of thinking collapsed by collaboration and connectivity, in order to help facilitate the growth of businesses(Saric et al., 2018). IT is quick and simple, so that workers can interact and input in a timely manner, bringing closeness between employees. This will strengthen the team spirit of organizational workers(Feeley et al., 2020).

2. Research Method

Due to the nature of the study and the dominant goals in uncovering the effect of using IT on the performance of human resources, this research was based on a descriptive and analytical approach, considering it the most appropriate approach for this type of research.

The data that used in this study were collected by a questionnaire sent to 35 of laboratory staff work in Souk Al-Shuyoukh Hospital. The survey participants were asked to return the answers directly to the researchers.The confidentiality of the information gathered from the participants was emphasized,the questionnaire also did not include any questions about identity after collecting the responses, 30 completed questionnaires were returned. Thus, Effective response rate reached 58.7%. The average age of the survey participants was 30.18, and it turns out that the average period they spent in their current position was 3.23 years.

3. Results

The electronic exchange of medical information represents one of the important aspects in speeding up the presentation of results and the possibility of processing.

This means that health care providers must be aware of the use of IT, and the organizations must provide the appropriate infrastructure to collect and process data, also monitor activities of users.The electronic exchange of data helped save time and effort in order to deliver the results to the appropriate side.

The correlations between IT and health care was consistent with our expectations, as the use of human resources supported by IT programs will improve health care provided in health organizations.The mean score on IT usage was 1.91 on a scale from 1 to 3.Table 2. shows the correlation coefficient. It reveals that IT usage is closely related to the evolving strategic effectiveness.

Table 2:Descriptive Statistics

Variables	Mean	SD
IT Usage	1.91	0.45
Technical Effectiveness	3.75	0.63
Strategic Effectiveness	3.46	0.63
Firm Age	30.18	0.41
Health care delivery	0.77	0.43

Participants were asked if there was a saving in time after the use of electronic data exchange system. The answer was 26 (86.7%) answered yes, and 4 (13.3%) answered no.For the specific research question: “Does saving time improve the health care services?”27 (90%) answered yes, that saving time improve the health care services, 3 (10%) answered no to the question.

In order to develop and build a base to support knowledge sharing, growth and development, organizations need strong HRM units for managing human resources. This study indicates that the use of IT can help build stronger human resource units.Where IT enables human resources to play a more important role and can improve their efficiency in participating in more important strategic roles.

Our findings indicate that robust IT solutions that process large amounts of information, free human resources from the burden of routine administrative tasks, remove barriers to their participation in strategic roles, and advance technical and strategic excellence are worthwhile solutions.

The positive correlation between the uses of IT supported human resources applications and the involvement of the human resources function in the strategic role of the business partner indicates that IT allows the human resource function to further assist the organization in achieving business goals and defining business strategies.

These results also indicate that by using IT, it will provide new opportunities to play strategic roles, which is good news after progress in this area has been slow.So, there is a necessary need to reconfigure the competency requirements for human resources professionals to meet the requirements of the strategic role.

The strong links between the use of IT and technical and strategic effectiveness are encouraging points, as they support the theory that IT can improve and develop the effectiveness of human resources.

The biggest use of IT supported human resources applications appears to be related to perceptions of improved outcomes in technical areas, such as employment, compensation, benefits, health and safety.It is clear that the information-processing capacity of IT allows human resources to more effectively present these transaction areas, thus improving perceptions of technical effectiveness.

IT support for human resources applications also correlates with better results perceptions in strategic areas, such as succession planning and strategic analysis. Thus IT will allow human resources professionals to focus on strategic plans to achieve results rather than on management plans themselves.

4. Conclusion

IT represented an important role in the development of organizations by reducing the effort, time and errors.The development of HRMis one of the most important areas that have been directly affected by IT.In this study, The effect of electronic data exchange was presented. Where this study was conducted in Souk Al-Shuyoukh Hospital (Thi-Qar Governorate)as case study.The laboratory in this hospital exchanges data electronically with other units.A descriptive analytical approach was used in this study.The results showed that electronic data exchange helps reduce errors and develop the capabilities of healthcare workers. This aids in the development of healthcare.As mentioned previously, this benefits patients to improve their health care. In other hand, obtaining useful information for stakeholders in the field of health information technology.

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